

IN THE CLAIMS:

The following is a complete listing of the claims, which replaces all earlier listings and all earlier versions.

1. - 9. (Canceled)

10. (New) A solid state image pickup apparatus wherein each pixel comprises:

a photoelectric conversion element;

transfer switch means including a first MOS transistor to transfer a signal charge generated in said photoelectric conversion element;

a floating diffusion area to receive the signal charge through said transfer switch means;

reset switch means including a second MOS transistor to reset the potential of said floating diffusion area; and

gate voltage setting means to set the gate voltage respectively of one or the other, or both, of the first and second MOS transistors of each pixel so as to satisfy a condition that the channel voltage of said first MOS transistor is between the depletion voltage of said photoelectric conversion element and the saturation voltage of said floating diffusion area, irrespective of variance of the threshold voltage value of said second MOS transistor between said pixels.

11. (New) A solid state image pickup apparatus according to Claim 10, wherein said gate voltage setting means sets the gate voltage of said first MOS transistor to be different from the gate voltage of the second MOS transistor.

12. (New) A solid state image pickup apparatus according to Claim 11, wherein said gate voltage setting means sets the gate voltage of said first MOS transistor to be smaller than the gate voltage of the second MOS transistor.

13. (New) A solid state image pickup apparatus according to Claim 10, wherein said photoelectric conversion element is an PN photodiode formed on a semiconductor substrate.

14. (New) A solid state image pickup apparatus including said gate voltage setting means as claimed in Claims 10, 11, 12 or 13, wherein said solid state image pickup apparatus is formed on a semiconductor chip.